



## TRANSPORTATION CABINET

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### MEMORANDUM

Construction Memo 03-10  
Materials Memo

**TO:** Chief District Engineers  
District TEBMs for Project Delivery & Preservation  
District TEBMs for Engineering Support  
District Section Engineers  
Central Office Construction  
Central Office Materials

**FROM:** William Broyles, P.E.  
Director, Division of Materials

Steven Criswell, P.E.  
Director, Division of Construction

**DATE:** April 29, 2010

**SUBJECT:** Documentation of Material Deficiencies

The reorganization of the district offices has increased the responsibility of individuals serving in the Project Delivery and Preservation Branches. Along with the reorganization and increased duties, the Cabinet has been faced with a decrease in experienced field inspectors and engineers during the last couple of years. The combination of these events has greatly affected our ability to effectively perform all of our required job duties. One area that appears to be lacking is the ability of Cabinet personnel to successfully ensure that all materials incorporated into highway construction projects meet Standard Specifications including sampling and testing requirements.

In an effort to assist with this task, the Division of Materials has recently started an audit function (or you may refer to this as a review) of the material certification process. The goal of this process is to identify areas that are in need of improvements. The Division of Materials has successfully completed eight reviews to date. Several areas of concern were identified during the review of the eight projects.

A particular area of concern was the number of deficiencies in the sample and testing requirements on a project. SiteManager provides a sampling checklist, a very useful project-specific tool. However, the sampling checklist must be modified for each contract by the District Materials Section Supervisor. It is essential that this checklist be modified at the beginning of the contract and when modifications to the contract are made in order for this process to work properly. A list of sample and testing deficiencies will be generated by SiteManager for each pay item during each pay estimate period. These deficiencies must be addressed during the current pay estimate cycle and not at the end of the project.



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The Cabinet recognizes that valid reasons exist for some deficiencies in materials sampling and testing. An example of a valid reason would be that during a testing procedure the equipment malfunctioned or broke. There may be other situations where staffing is limited and only one inspector is available to cover a project. As an example, there may be an embankment being constructed and a bridge deck being poured the same day. It would be impossible for the inspector to cover both operations; therefore, testing on the embankment would not be done that particular day. In order to document these occurrences, the SiteManager Daily Work Report (DWR) has been modified by adding an additional remark labeled **Material Deficiency**. The Material Deficiency remark should be used to document problems associated with sampling, testing or delivered materials to be used on highway construction projects. These problems may include but are not limited to the following:

1. Project material samples are not taken according to the proper sampling frequencies.
2. Project material tests are not performed according to the proper testing frequencies.
3. Materials that do not satisfy Standard Specifications are incorporated into the project.
4. Materials are delivered to the project damaged, without proper documentation, missing proper identifying markings (KY Oval), etc.

The revision to SiteManager also allows employees in the district materials offices to create a DWR for the documentation of any testing deficiency. District Materials personnel are to use the **Material Deficiency** remark only and are not to enter any additional information on the DWR. All DWRs created by Materials personnel will be reviewed and approved by the Section Engineer during each pay estimate cycle. A report has been created to compile the remarks that are entered into the Material Deficiency field for a Contract. This report will be useful at the end of the Contract to provide proper justification for the Materials Exception Letter.

The timely submittal of the Asphalt Mixtures Acceptance Workbook (AMAW) from the Contractor is also an issue with the proper acceptance of materials. Late submittal of the AMAW hampers the Cabinet's ability to track and document sampling and testing data as well as information needed to calculate fuel and asphalt adjustments. As per Section 402.03.02 of the Standard Specifications, the Contractor is required to submit the AMAW spreadsheets within five working days after completing the lot of production of asphalt mixture. The Prime Contractor should be contacted if the spreadsheets are not submitted in accordance with the Contract requirements. This contact should be made by the District Materials Office as soon as they are aware of the issue. If this notification fails to produce satisfactory results then the Section Engineer's Office should be contacted about withholding the Contractor's pay for the items of work in question. Withholding of pay should only occur after documenting that the Contractor was advised and had appropriate time to respond.

The Division of Materials is currently reviewing sampling and testing requirements for all materials to be incorporated in highway construction projects. The current sampling and testing requirements were established years ago when inspectors were more plentiful. The Cabinet recognizes that personnel resources are greatly reduced at present and is currently reviewing all materials in an attempt to establish requirements that are manageable based upon the current staffing levels. Any changes to the

requirements will not be detrimental to the performance of the project and will continue to ensure the Commonwealth a quality product.

Our ultimate goal is to complete all sampling and testing for a project, but the Cabinet understands that circumstances arise when total compliance is not possible. We are encouraging our inspection staff to document these instances in detail without concern for a reprimand for situations over which they had no control. The Cabinet is trying to avoid entering information that is not completely factual in order to “make the system work.” Hopefully, the recent change to the SiteManager system is a step in the right direction.

Attached to this memorandum are guidelines for the proper use of the new Materials Deficiency remark field within the SiteManager DWR. The attachment contains detailed examples of justifications acceptable to the Division of Materials.

GUIDANCE/POLICY ON USE OF SITEMANAGER  
**MATERIAL DEFICIENCY** REMARK ON DAILY WORK REPORT

The ***Material Deficiency*** remark on a SiteManager Daily Work Report (DWR) should be used to document any problem associated with sampling, testing, or delivered materials to be used on Highway Construction Projects. The remark should give a full and detailed explanation of the issue that occurred on site and should list the material name, project line item, and location on the project. Any other pertinent information should also be included to accurately document the deficiency.

**Guidelines for proper documentation of deficient sampling and testing**

Samples not taken or tests not completed on samples must be addressed in the Materials Exception Letter. These samples and tests are indicated as a deficiency on the Contract Sample Checklist. Tests that are not completed on a sample should be cancelled. Once uncompleted test templates are cancelled, the sample can be authorized. The Materials Exception Letter should document the justification for not sampling or completing the required testing. This justification should include a detailed reason for not meeting the sampling and testing requirements. The examples of acceptable justifications below would be entered in the DWR **Material Deficiency** remark. These remarks can be reviewed at the time of Materials Certification submittals and will assist with developing the Materials Exception Letter.

Examples of unacceptable and acceptable justifications follow:

**Unacceptable Justifications**

- We forgot to sample and test the concrete that was used in the headwalls but we will try to do better on the next job.
- We took a sample of DGA but didn't have time to run the tests.

**Acceptable Justifications**

- Due to current staffing levels within our crew, there was only one inspector available for this contract on 4-12-09. We were not able to perform sampling and testing of the Class A concrete placed for three headwalls placed at stations 141+12, 150+50 and 152+00. There was a bridge deck being placed concurrently with the headwalls, and it was decided that the deck was the critical item for inspection, sampling and testing. The headwalls were visually inspected after placement and appear to be acceptable.
- A sample of DGA was taken to represent the material placed on 6-12-09 at station 250+12. Gradations could not be completed in an appropriate time due to the three materials crew technicians being utilized at asphalt plants currently producing for other contracts. The DGA was visually inspected prior to placement of the asphalt base on 6-16-09 and appeared to be the appropriate gradation and structurally sound.

**Other Examples of When the MATERIAL DEFICIENCY Remark Should be Used**

- Permanent striping placed on project station 100+00 to 150+00. No paint sample was taken as striping was completed while I inspected Asphalt surface placement at station 307+00. Stripers had left project before I could return to area in question. Striping passes visual inspection. I was the only inspector on site this date.

- The required Nuclear Density test was not performed on the third lift of soil embankment at Station 273+98. I was the only inspector on site this date and fill was being placed at the same time as Concrete was placed for Pier 1 of the bridge at Station 405+07. Density tests before and after this test had passing density and moisture results, and the material appeared to have adequate compaction based upon visual inspection.
- Concrete Class-A accepted without entrained air test results. 4.5 cubic yards was received to be used on sidewalk ramp at station 155+27 RT. Seal on meter broke as test was being performed and concrete was accepted on a visual basis.
- Received notification from Division of Materials that sample of Geotextile fabric used to wrap pipe backfill, station 173+00 placed 3/19/2009, had failed physical testing requirements.
- Shipment of reinforced concrete pipe from Quality Pipe Company arrived on site without proper certifications. It was also determined that 3 pieces of 36" pipe were damaged. Damaged pipe was marked by inspector for removal from site. Supplier to fax all appropriate paperwork to Section Engineer's office before material is used on project.

Samples with test results not meeting specification should receive a sample status of Fail or Failed and Removed from Project. Failed samples should also include a disposition remark stating the justification for leaving the material in-place and any deductions applied to the Contractor. A sample status of Failed and Removed from Project means that the material placed on the contract was physically removed due to a test failure.